AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (CURRENTLY AMENDED) A reformer for a mixture of low-pressure hydrocarbon gas and steam for fueling a proton-exchange fuel cell with hydrogen from said mixture, comprising:

a cylinder loosely packed with a palletized catalyst with a cap at each end,

a fuel tube having an outflow end coupled to said cylinder for introducing said hydrocarbon gas into one end of said cylinder at low pressure ~~having an outflow end coupled to said cylinder through a cap at one end of said cylinder~~,

a steam tube coaxial with ~~said fuel tube~~ and surrounding said fuel tube for concurrently introducing said hydrocarbon gas and steam at a pressure higher than ~~said low~~ the pressure of said hydrocarbon gas ~~through said cap~~ at said one end of said cylinder, said steam tube having a tip ~~of finite length~~ at its outflow end that is gradually reduced in diameter over its length to form a truncated conical tip, ~~with its~~ said fuel tube having a substantially open end coincident with, and of smaller diameter than said steam tube diameter ~~forming an outflow end for said fuel tube~~, and,

an outflow tube protruding outwardly from said cylinder ~~through an end cap~~ at an end of said cylinder opposite said one end,

~~wherein~~ said steam tube ~~extends~~ being formed and ~~to said outflow end of said fuel tube not only for flowing steam~~ to draw ~~out~~ said ~~low pressure~~ hydrocarbon gas ~~for mixing~~ into mixture with said steam, ~~but also flows~~ and to direct said steam ~~through a core of said fuel outflow~~ in a ~~direction~~ path that is at an acute angle with the ~~direction~~ path of said fuel outflow ~~core~~, ~~which is~~ said fuel flow path lying

substantially along the axis of said coaxial fuel and steam tubes, ~~thereby causing to cause steam to~~ and that crosses said fuel ~~outflow~~ path at an acute angle from all radial directions[[,]].

~~whereby said hydrocarbon gas and steam mix before coming in contact with said loosely packed palletized catalyst as steam and fuel mixture flows over said catalyst through said cylinder to produce a high yield of H_2, as said hydrocarbon gas is converted into a flow of H_2, CO and CO_2 through said outflow tube of said cylinder~~.

2. (CURRENTLY AMENDED) A hydrocarbon gas and steam reformer as defined in claim 1 wherein said fuel tube has a tip of ~~finite~~ given length at its outflow end that is reduced in diameter gradually along said ~~finite~~ given length.

3. (CURRENTLY AMENDED) A hydrocarbon gas and steam reformer as defined in claim 1 where said hydrocarbon gas is low pressure propane, stored as ~~liquified~~ liquefied propane in a container ~~for safe use~~ on aboard recreational vehicles.

4. (PREVIOUSLY PRESENTED) A hydrocarbon gas and steam reformer as defined in claim 1 including a heat source around said cylinder for heating said catalyst.

5. (NEW) A method for mixing low pressure hydrocarbon gas with steam for fueling a portion-exchange fuel cell with hydrogen from said mixture compising: mixing low pressure hydrocarbon gas with steam at a pressure higher than said low pressure hydrocarbon gas, said mixing taking place at the outlet ends of two concentric tubes, an outer tube and an inner tube, said outer tube delivering steam

and said inner tube delivering said low pressure hydrocarbon gas, wherein said mixing includes directing steam into said hydrocarbon gas at an acute angle to the path of said hydrocarbon gas flow on a plurality of radial paths.